The role of statistics in clinical trials

Before a medicine is approved for use, it has to undergo clinical trials to test its efficacy and safety.

Clinical research involves investigating proposed medical treatments, assessing the relative benefits of competing therapies, and establishing optimal treatment combinations. Clinical research attempts to answer questions such as "should a man with prostate cancer undergo radical prostatectomy or radiation or wait and see?" and "is the incidence of serious adverse effects among patients receiving a new pain-relieving therapy greater than the incidence of serious adverse effects in patients receiving the standard therapy?"

Statistics play a very important role in any clinical trial from design, conduct, analysis, and reporting in terms of controlling for and minimising biases, confounding factors, and measuring random errors. A grasp of statistical methods is fundamental to understanding randomised trial methods and results.

Statistical methods provide formal accounting for sources of variability in patients' responses to treatment. The use of statistics in clinical trials allows the clinical researcher to form reasonable and accurate inferences from collected information, and sound decisions in the presence of uncertainty. Statistics are key in preventing errors and biases in medical research.

Attachment

- Presentation: The Purpose and Fundamentals of Statistics in Clinical Trials

Size: 1,139,740 bytes, Format: .pptx
This presentation provides more information and examples on the purpose of statistics in clinical trials and an overview of some of the fundamental concepts of statistics that are used.

- Presentation: The Role of Statistics in Clinical Trials
Size: 354,126 bytes, Format: .pptx
A presentation describing the role of statistics in clinical trials, which can be adapted for own use.

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